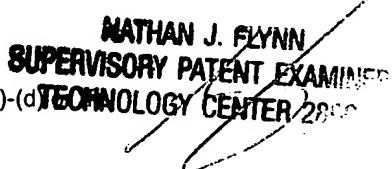|	Application No.	Applicant(s)
Notice of Allowability	09/921,167	BENNETT ET AL.
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *10/02/2006*.

2. ☒ The allowed claim(s) is/are *1, 3-22 and 24-40 (Total 38 claims)*.

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

 a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

 1. ☐ Certified copies of the priority documents have been received.

 2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

 * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

 (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

 (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

 Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date *04/15/2002*

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1.   Claims 1, 3-22 and 24-40 are allowed. Claims 2 and 23 are cancelled.

EXAMINER'S AMENDMENT

2.   An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Norma E. Henderson on 12/15/2006.

3.   The application has been amended as follows:

A. In the claims:

a.   Claims 2 and 23 have been previously cancelled.

b.   Claim 1. (currently amended)   A method executed in a computer system for routing a message from a sender in a first digital mobile network employing a first digital mobile network protocol to an intended receiver in a second different digital mobile network, the second digital mobile network employing a second digital mobile network protocol that is different from the first network protocol, the message comprising a message body and associated message routing information, the method comprising:

forwarding said message to a server from said sender, said server being connectable to said first and said second digital mobile network;

relating, <u>at the application layer</u> using a routing database, a receiver identifier, the receiver identifier being contained in the associated message routing

information and associated with the intended receiver, to <u>a method associated with a</u> <u>network connection type associated with the second digital mobile network and</u> corresponding routing format information associated with the second digital mobile network protocol, the routing format information associated with the second digital mobile network protocol comprising at least a second protocol mobile carrier interface format type and a second protocol mobile carrier addressing format type;

reformatting said associated message routing information into a format specified by said corresponding routing format information, wherein the reformatting is transparent to a sender and receiver of the message and the message body remains unchanged, by the steps of:

translating the receiver identifier to a destination address that conforms to the second protocol mobile carrier addressing format type;

placing the destination address into a reformatted message that has a structure that conforms to the second protocol mobile carrier interface format type; and

placing the message body ~~unchanged~~ into the reformatted message in a manner that conforms to the second protocol mobile carrier interface format type; and

forwarding said reformatted message to said receiver in accordance with <u>the method associated with the network connection type and</u> the reformatted associated message routing information.

c.   Claim 5. (currently amended) The method of claim 1, <u>the step of relating</u> further comprising:

performing a ~~first~~ query using the routing database to determine a countrywide

mobile identification number format of a country associated with the receiver.

d.   Claim 6. (currently amended) The method of claim 1 ~~5~~, <u>the step of relating</u>

further comprising:

performing a ~~second~~ query using the routing database to determine if information

<u>related to</u> ~~identifying~~ the receiver is included in the routing database <u>and returning an</u>

<u>error message if the information is not found</u>.

e.   Claim 7. (currently amended) The method of claim 1 ~~6~~, <u>the step of relating</u>

further comprising:

performing a ~~third~~ query using the routing database to determine said routing

information associated with the second digital mobile network of the receiver, said

routing information including at least ~~one of:~~

~~format of a message,~~ <u>an</u> electronic mail address format~~, and message~~

~~delivery method~~.

f.   Claim 8. (currently amended) The method of claim 1 ~~7~~, wherein ~~routing~~

~~information including a message delivery~~ <u>the</u> method <u>associated with the network</u>

<u>connection type</u> uses <u>at least</u> one of:

a direct connection to an operator, an application, and <u>an</u> e-mail connection.

g.   Claim 22. (currently amended) A computer program product <u>stored on a</u>

<u>computer storage media</u> for routing a message from a sender in a first digital mobile

network employing a first digital mobile network protocol to an intended receiver in a

second different digital mobile network, the second digital mobile network employing a

second digital mobile network protocol that is different from the first network protocol,

the message comprising a message body and associated message routing information,

~~the method~~ comprising:

machine executable code for forwarding said message to a server from said

sender, said server being connectable to said first and said second digital mobile

networks;

machine executable code for relating, <u>at the application layer</u> using a routing

database, a receiver identifier, the receiver identifier being contained in the associated

message routing information and associated with the intended receiver to <u>a method</u>

<u>associated with a network connection type associated with the second digital mobile</u>

<u>network and</u> corresponding routing format information associated with the second digital

mobile network protocol, the routing format information associated with the second

digital mobile network protocol comprising at least a second protocol mobile carrier

interface format type and a second protocol mobile carrier addressing format type;

machine executable code for reformatting said associated message routing

information into a format specified by said corresponding routing format information,

wherein the reformatting is transparent to a sender and receiver of the message and the

message body remains unchanged, ~~by the steps of:~~ translating the receiver identifier to

a destination address that conforms to the second protocol mobile carrier addressing

format type; placing the destination address into a reformatted message that has a

structure that conforms to the second protocol mobile carrier interface format type; and

placing the message body ~~unchanged~~ into the reformatted message in a manner that conforms to the second protocol mobile carrier interface format type; and

machine executable code for forwarding said reformatted message to said receiver in accordance with <u>the method associated with the network connection type</u> <u>and</u> the reformatted associated message routing information.

h. Claim 26. (currently amended) The computer program product of claim 22, further comprising:

machine executable code for performing a ~~first~~ query using the routing database to determine a countrywide mobile identification number format of a country associated with the receiver.

i. Claim 27. (currently amended) The computer program product of claim <u>22</u> ~~26~~, further comprising:

machine executable code for performing a ~~second~~ query using the routing database to determine if information <u>related to</u> ~~identifying~~ the receiver is included in the routing database <u>and returning an error message if the information is not found</u>.

J. Claim 28. (currently amended) The computer program product of claim 27, further comprising:

machine executable code for performing a ~~third~~ query using the routing database to determine said routing information associated with the second digital mobile network of the receiver, said routing information including at least ~~one of:~~

~~format of a message,~~ <u>an</u> electronic mail address format~~, and~~

~~message delivery method~~.

B.   In the Specification:

The following amended paragraphs replaces the corresponding paragraphs of the published application.

a.   On page 1, paragraph [0004]

[0004] One particular type of messaging format and service is called the Short Message Service (SMS). In particular with SMS, each SMS message is routed through the mobile network operator network ~~of that~~ of the receiver of a message. When a sender and receiver are not within the same cellular network, problems may occur in sending messages such as those in accordance with differing SMS formats addressing and protocols used in different networks in connection with the SMS message. The Short Message Service Centers (SMSC) within each particular network such as those used in connection with SMS messages may not comply <u>with</u> ~~to~~ any single standard. Compatibility may only be guaranteed within a single digital mobile network. For example, a Global System for Mobile communications (GSM) type of network is a primary system for the SMS implementation network used in Europe. Other regions, such as North and South America, may use different mixed technologies in cellular networks, for example, such as Advanced Mobile Phone Service AMPS Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) as well as GSM. SMSC manufacturers may also each implement different protocols further compounding the mixed varying technologies. Thus, communications between a sender and receiver in which the sender and receiver each use different digital mobile networks, and thus

possibly different technologies and standards, may have problems in sending messages between networks.

b.   On page 1, paragraph [0011]

[0011] ~~FIG. 2 is~~ FIGS. 2A and B depict an example ~~of an~~ embodiment of a flowchart of steps of one embodiment of processing when a user connects from the internet sending a message to a user on an SMS communication device;

c.   On page 1, paragraph [0012]

[0012] ~~FIG. 3 is~~ FIGS. 3A-C depict an example ~~of an~~ embodiment of a flowchart of steps of one embodiment when an MO SMS (Mobile originating SMS) user sends a message to a receiver using an SMS device the receiver possibly residing on a different network;

d.   On page 1, paragraph [0013]

[0013] ~~FIG. 4 is~~ FIGS. 4A and B depict a flowchart of steps of one embodiment of how to determine routing information;

e.   On page 5, paragraph [0065]

[0065] It should also be noted as described in more detail elsewhere herein, the information regarding the protocol and transport medium may be encoded in the database 22 in one or more fields.

f.   On page 5, paragraph [0070]

[0070] Referring now to FIGS. 2A and 2B ~~FIG. 2~~, shown is a flowchart of steps of one embodiment from a user-interaction perspective for sending an SMS message. In this example, these steps described are those that may be associated with using the WWW or the internet for sending a message. The steps that will be described in conjunction

with FIGS. 2A and 2B ~~FIG. 2~~, flowchart 70, are those that may be performed when an

SMS message is originated from the web, as illustrated by elements 12 and the 14 of

FIG. 1.

g.   On page 6, paragraph [0073]

[0073] At step 72, the user enters the address of the home page 74 as indicated in the

flowchart of FIG. 2A. Control proceeds to step 76 where a determination is made as to

whether the user is registered. If a determination is made that the user is not registered,

control proceeds to step 78 where a user registration process may be performed. For

example, a registration process may be performed to register a user, such as 12 or 14

with reference to FIG. 1 using the server 24. This registration process enables the user

to send a message, for example, to another user at a different network using the server.

h.   On page 6, paragraph [0075]

[0075] At step 82, the routing database 22 may be consulted to obtain the country

number format. In response to the user selecting the SMS recipient's country as entered

at step 81, the database may be consulted to return the correct MIN numbering format

as an input example. This may be displayed at step 84 as one of the fields to the

sending user. Referring to FIG. 2A, flowchart 70, step 84 indicates a field 84a which

may be output or displayed, for example, on the user's screen to guide completion of a

subsequent field 84b. These help guides may vary with each country and may be

returned by the database shown in FIG. 8, for example in field 410. The help guides

may include an example of the required MIN format and a short help text in the

appropriate language. Additional fields, for example, may be included in a form in which

users enter the data of 84b for the recipient's phone number following the same format

specified in 84a as well as the message text in field 84c.

i.   On page 7, paragraph [0082]

[0082] It should be noted that what has been described in connection with the flowchart

70 of FIGS. 2A and 2B FIG. 2 is a process that may be generalized for sending more

than one message to more than one recipient on different networks. Additionally, it

should be noted that the initial query performed at step 82 may also be used during the

registration process or as part of editing or adding a new mobile device. For example,

the user may be required to enter a country as well as a phone number or MIN. The

database may be consulted, and the correct country-wide MIN may be returned to the

user to serve as a template for user entry in connection with user registration.

j.   On page 7, paragraph [0084]

[0084] It should also be noted that the processing of FIGS. 2A and 2B FIG. 2 includes

steps that may be used, for example, where an originating device has internet or

browser capabilities, such as a browser phone or personal computer or other device

that may transmit data in accordance with HTTP protocol in this example. Part of the

processing steps of FIGS. 2A and 2B FIG. 2 may transmit data interactively, or in real-

time session.

k.   On page 7, paragraph [0085]

[0085] Referring now to FIGS. 3A-C FIG. 3, shown is a flowchart 120 of method steps of

one embodiment that may be used in performing communications, for example,

originating from an MO SMS phone 16 with reference to the network 10 of FIG. 1. It

should be noted that the processing steps of FIGS. 3A-C FIG. 3 may not be performed

in real time, but, rather, using an SMS data channel for message sending from the MO

SMS device 16.

l.   On page 7, paragraph [0089]

[0089] 1. As email--Most MO SMS phones have the ability to send Email, these emails

are sent as SMS to the host networks SMSC and there the full SMTP format is

completed. This SMTP format may add the sender's return email as MIN@operator

domain format, for example 2322332@operator.ext. In this case, the receiver of these

emails may use a POP3 email server, hence is "received in email form" as indicated in

step 124 of FIG. 3A. The POP3 email server may be associated with the central server

24 of FIG. 1. The POP3 server may also be remote.

m.   On page 8, paragraph [0092]

[0092] In either of the two cases described above, the message is received as a

formatted text file. This is the file that is received on the server 24, and represented by

step 128 of FIG. 3A. In step 128 parsing logic isolates required fields from the received

text files and searches for commands, such as "STOCK", seen in 122c, and "Soames",

seen in step 122a. The former is a request for a stock quote, and the latter relates to a

"buddy" in the user's address book called "Soames".

n.   On page 8, paragraph [0105]

[0105] If at step 182 a buddy's name is found in the user's database (see previous note

on "Dynamic Keywords"), the routing path for that buddy is returned and the message is

sent 184 to the recipient. As previously described in connection with FIGS. 2A and 2B

FIG. 2, steps 196a, 196b and 196c may result in reformatting of a message in accordance with the appropriate format and type for the recipient's network and connection. These are similar to what is described in connection with the processing of steps 108a, 108b and 108c of FIG. 2B and as described elsewhere in connection with FIGS. 2A and 2B FIG. 2.

o.   On page 9, paragraph [0106]

[0106] At step 140, if a determination is made that the SMS message begins with a phone number, control proceeds to step 144, where the SMS message that is received by the server is parsed to extract the recipient's country code. At step 146, this recipient country code is used to look up in the routing database 22 a corresponding country for the country code extracted at step 144. The country codes (prefixes) and numbers may exist in sector 406 of the database shown in FIG. 8. At step 148, a determination is made as to whether the country has been located from the routing database. If a determination is made that the country has not been located, control proceeds to step 150 where an error message is generated and the message is returned to the sender at step 154. As an alternative process, (not shown) logic may be such that in the case of not finding a country code, the recipient is deemed to be in the same country as the sender, in which case the senders country code may be added to the recipients number. More detail of the number lookup process is shown in a detailed flowchart FIGS. 4A and 4B FIG. 4.

p.   On page 9, paragraph [0109]

[0109] At step 176, if a determination is made that the routing information is not known, an error message may be generated such as indicated at output 162 that the recipient's network operator has not enabled messaging services. Subsequently, from the processing at step 160 that may result, for example, in a display of a message as indicated at 162, control proceeds to step 154 where the SMS message is returned to the sender. As previously described in connection with <u>FIGS. 2A and 2B</u> ~~FIG. 2~~, steps 196a, 196b and 196c may result in reformatting the message in accordance with the appropriate format and type for the recipient's network and connection. Please note that these are similar to what is described in connection with the processing of steps 108a, 108b and 108c of FIG. 2<u>B</u> and will be described in more detail in paragraphs that follow in connection with other figures.

q.   On page 9, paragraph [0110]

[0110] The processing steps described in connection with flowchart 120 of <u>FIGS. 3A-C</u> ~~FIG. 3~~ are those that may be performed in connection with data polling to obtain information, such as a stock quite, or sending a message to another enabled device where the originating device, for example, may be an MO SMS phone, such as element 16 of FIG. 1. Previously described in connection with <u>FIGS. 2A and 2B</u> ~~FIG. 2~~, are processing steps that may be associated, for example, with sending an SMS message originating from a personal computer or from a WAP phone as shown with reference to the network 10 of FIG. 1 from elements 12 and/or 14. Using any one or more of elements 12, 14, and 16 of FIG. 1 as points of origination, an SMS message may be sent, for example, to user 20 using the SMS phone through the routing database 22.

The database 22 may be queried in accordance with software executing on the server 24 as indicated in connection with various processing steps just described herein.

r.   On page 9, paragraph [0112]

[0112] In general, from the above description, and the logic of <u>FIGS. 3A-C</u> ~~FIG. 3~~, it may be seen that certain services, that are those that are thought to have higher volume of use, may be given higher priority in the logical process sequence. The presented priority is one example, and may change as user needs change. The presented priority is:

s.   On page 10, paragraph [0117]

[0117] For example, if a message recipient's phone number is indicated by the string "+5693183098", the 5 at beginning of the string may first be checked in determining the country code. As a result of querying the database, there may be an indication that there are multiple country codes beginning with a leading digit of "5". Thus, a single country is not unique for the digit five. A subsequent second look-up may be done upon the same string returning a "6" as a second digit. Thus, a database query may be performed using five six "56" as the country code. Upon a single country being returned as result of a database query, the "56" indicates a unique combination of two digits corresponding to a country. For example, in one embodiment, performing a query of routing database for the one or more countries having a country code with first two digits of "56" returns the single country of Chile. The return of only a single country being associated with the two digits causes the country-code look-up process to terminate. If no country is found, an error may be generated for example in connection with the termination processing at step 148 and the error message 152 displayed in

connection with the processing of step 150 with reference to flowchart 120 in <u>FIGS. 3A-C</u> ~~FIG. 3~~.

t.   On page 10, paragraph [0120]

[0120] Referring now to <u>FIGS. 4A and 4B</u> ~~FIG. 4~~, shown is a flowchart 200 of steps of one embodiment for performing a look-up in the routing database 22. The steps in flowchart 200 may be performed, for example, in connection with consulting or querying a routing database to return particular information. Generally, the processing described in the flowchart 200 of <u>FIGS. 4A and 4B</u> ~~FIG. 4~~ details database querying steps, for example, as previously described in connection with flowcharts 120 and 70.

u.   On page 12, paragraph [0137]

[0137] What will now be described are other types of formatting represented in ~~the~~ FIG. <u>5</u> 300. The user's name 306a may be placed in a corresponding field in the SMTP email 304 in field 320b. The recipient's name 306b may be in the destination field 312. Similarly, the subject field 318 maybe some fixed format such as "from Tiaxa" or some specified title or application name as indicated in field 318. The message text 308c occupies field 320a of the reformatted message 304.

v.   On page 13, paragraph [0153]

[0153] In this example, cellular operation "Z" may use the standard 10-digit MIN resulting in no change to the MIN in the output formatted message. Thus, the number as indicated in field 368b may be copied directly to field 372a without alterations. Other fields may also be copied and mapped as indicated in ~~360~~ FIG. 7 <u>360</u>. The message in turn may be received by the mobile network operator and forwarded accordingly to the

recipient. As the connection is direct to the SMSC, the message is not converted on reception by the SMSC. Rather, it may be forwarded directly to the recipient's handset. Advantages exist in this type of connection, for example, in that it is known if the message is received successfully on the handset. The whole process is logged step by step, and these logs in turn may be filtered and modified to form billing information.

w. On page 14, paragraph [0171]

[0171] The Numbers Table 406 indicates that MIN or phone number ranges for each particular celco Id. This table is critical as it performs the initial lookup of the target mobile network operator, taking as its input an unknown MIN. The celco ID 406a is that particular field for example identified in field 404a used as a reference to index into the numbers Table 406, this field is a short alphanumeric label that uniquely identifies all operators. The international country code 406b is included, and is used in cases where the incoming MIN number has had the country code isolated from the rest of the number, this permits faster lookup as only the number in that country are scanned. See step 220 in FIG. 4A for an example of its use. An area code or cellular number prefix is included in the field 406c, some countries assign a unique code or access number to indicate that the recipient is a mobile device, others use normal area codes as for traditional telephony. Fields 406d and 406e identify ranges of phone numbers allocated by each particular operator. These numbers are the local form only, as they are without country code and prefix. This form may be used in some messaging systems using only local form MIN. Similarly, the fields 406f and 406g identify MIN or phone number allocation ranges that include the prefix identified in field 406c and country code as in

field 406b. These number ranges are those generally consulted in the mobile network operator lookup process. As the numbers are in complete international form, they can may only one unique device associated worldwide, guaranteeing that the mobile network operator returned is the correct one. Record ID field 406h is a unique identifier for each line of the database, this is needed for correct database operation and processing.

REASONS FOR ALLOWANCE

4.   The following is an examiner's statement of reasons for allowance:

Applicant's arguments that neither Kennedy, Purcell, Hammer or Lindquist discloses are persuasive with respect to relating, at the application layer using a routing database, a receiver identifier, the receiver identifier being contained in the associated message routing information and associated with the intended receiver, to a method associated with a network connection type associated with the second digital mobile network and corresponding routing format information associated with the second digital mobile network protocol, the routing format information associated with the second digital mobile network protocol comprising at least a second protocol mobile carrier interface format type and a second protocol mobile carrier addressing format type, and reformatting the associated message routing information into a format specified by corresponding routing format information, wherein the reformatting is transparent to a sender and receiver of the message and the message body remains unchanged. None of the prior arts of record teach or suggest the claimed limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached o If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp
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